

RAILWAY JOTTINGS.

Among the plans which these pinching times of poverty have suggested for the economy of working expenses, one of the most curious and important seems to be the Lilliputian system of Mr. Samuels and Mr. Adams, now about to be tried in the branch traffic on part of the Eastern Counties and Bristol and Exeter. To diminish the unprofitable weight of a train, and increase the tractive power of that weight to the utmost, are, of course, the objects of this invention. They propose, says the *Railway Chronicle*, to form a single large carriage, like those at present made by Mr. Adams for the North Woolwich branch of the Eastern Counties, capable of carrying sixty passengers, and to carry on the front of it a small locomotive engine. The tender will form part of the carriage. Of course the weight of the whole is to be placed extremely low. There will also be a small additional carriage, so as to take on the whole 100 or 120 passengers, with engine and tender. The weight of engine and carriage will not exceed some 12 to 15 tons, and with passengers, will weigh perhaps 20 tons.

—Eighty-three railway Bills, authorising the raising of 14,887,270*l.*, viz.:—10,794,000*l.* by shares, and 4,137,610*l.* by loans, are stated to have received the Royal assent during the session.—The viaduct at Liverpool, for the Liverpool and Bury line, is nearly complete. The Walton and Upholland tunnels are finished, and all the bridges between Liverpool and Wigan are built. From near Wigan to the junction with the Bolton and Preston the bridges are all built. The large viaducts near Bolton are in a forward state. The masonry of the Darcy Lever viaduct is complete, and two-thirds of the iron-work is fixed. The stone viaduct at Bury is finished. The permanent way (double line) is far advanced throughout. Several of the platforms and stations are built, and the line may be opened next month.—The temporary wooden bridge across the Tweed, on the north-eastern line from Newcastle has had a carriage on it, but it will not be ready till the 1st of next month.—On the under part of the Kelso and St. Boswell's branch line little progress is being made, if we except the bridge over the Teviot, at Roxburgh, where they are casting the arches. More time has already been expended on two miles here, it is said, than might have constructed a railway five times the length.

TO EXTINGUISH FIRES.

DR. REID has proposed a plan for extinguishing fires in ships. He says, in the *Daily News*:—"Flame or combustion cannot go on where there is carbonic acid gas. This is one of the elementary principles of chemistry. It may be shewn in various ways. A lighted taper plunged into a jar of carbonic acid gas is instantaneously extinguished; or, if we take the glass of a common argand burner, and close the upper end of it by a flat plate of glass, or even by a piece of card or pasteboard, firmly, so completely as to prevent any current of air through the tube, on introducing for about an inch or so the flame of a candle at the other extremity (the glass of the argand burner being held upright), it will shortly, usually in the space of little more than a minute, be extinguished, merely by the accumulation of the carbonic acid gas produced by its own combustion. The production of carbonic acid gas is completely at our command, for on adding dilute sulphuric acid to chalk, we can set at liberty, in the space of two or three minutes, enormous volumes of the so-called fixed air. The cost of material for a ship of 1,000 tons would not exceed, at the utmost, 15*l.* or 20*l.* sterling. By means of tubes proceeding from the upper deck, in connection with a cistern containing the dilute sulphuric acid, to the quarters below where there is most likelihood of danger from fire, or moveable hose (made of gutta serena), which can be introduced into any part of the vessel,—the oil of vitriol, previously diluted with water, can be at once poured over the chalk (which is to be thrown down in the place where the fire rages), and immediately, the carbonic acid being set at liberty, the fire is extinguished; for combustion cannot go on in an atmosphere of carbonic acid gas. I have been much occupied expe-

rimentering on this subject, and I find that from five tons of chalk as much carbonic acid gas may be obtained as will be sufficient to completely fill a vessel of 1,000 tons burden. The expense of laying the tubes will not exceed 30*l.* or 40*l.*; and, once laid, there is no further trouble or expense." The principle of the "Fire Annihilator," to which we have referred several times, seems here involved, but the apparatus would apparently be cumbersome, and application comparatively difficult.

Since the foregoing was in type we have received the following letter from Mr. Reid:—"Sir,—As the patent of the "Fire Annihilator" does not seem to be capable of being immediately used, and as fires nevertheless occur daily or nightly, I beg leave to direct your attention to the plan I have proposed for extinguishing fires at sea; and if you feel disposed to notice it, may I beg that you will subjoin that I have ascertained the expense may be reduced to fully one-third of what was first named, by a peculiar adjustment, and that I only require a nominal fee for superintending the arrangement of the tubes, and a small allowance to my assistant for directing and explaining the manipulations necessary; so that the plan or scheme may be successfully wrought by the humblest capacity.

I am, Sir, &c.,

WILLIAM REID, M.D.

4, Salisbury-street, Strand.

TRIAL OF THE BOWSTRING RAILWAY BRIDGE.

On Wednesday week, one of the new wrought iron bowstring bridges, constructed for the Blackwall extension line, under the superintendence of the engineer, Mr. Locke, was publicly tested at Messrs. Fox Henderson and Co.'s works, near Birmingham, in the presence of the Government Inspectors of Railways, the secretary to the Government Board of Commissioners for inquiring into the strength of iron, the mayor of Birmingham and others. The bridge-rib presented a clear span of 120 feet between the bearings. It is constructed entirely of wrought-iron, and consists of an arch of boiler plates and angle-iron, tied across at the ends by horizontal bars, and the tie-bars are connected with the arch by vertical standards and by a double system of diagonals, with the view of distributing over the whole curve of the arch the action of weights placed on or passing over any point of the bridge. The proof was applied by loading the bridge-rib with 240 tons of rails, bars, &c., and it produced, as we are informed, the following results, as the weight was gradually applied.

Weight in tons of rails, &c. placed on the cross girders.	Extreme amount of deflection produced at centre of arch.
Tons.	Inches.
311.....	0½
684.....	0¾
1023.....	1¼
137.....	2½
171½.....	2¾
205½.....	3½
240.....	3¾

The proof weight was fixed at 240 tons, as being double the greatest load which the bridge can be required to bear. A heavy goods train weighs less than half a ton per foot lineal: a train consisting entirely of locomotive engines (which would be the heaviest of all possible trains) would only weigh one ton per foot lineal, and consequently would place a load of not more than 120 tons on a bridge of 120 feet span.

We were not present, but have no doubt as to the correctness of the results reported to us.

THE DIORAMA in the Regent's-park, with the two pictures now exhibiting, and thirteen large pictures of former years, has been sold by auction for 6,750*l.* The building is said to have cost 10,000*l.*, and is held for an unexpired term of 74 years.

DINNER to a SCULPTOR.—In the week before last, a public dinner was given in the cottage of Burns, Ayr, to Mr. Fillans, sculptor, on the occasion of his sojourn in the neighbourhood after the "inauguration" of his statue of the late Sir James Shaw, Bart., at the cross of Kilmarnock, and the bust of Professor Wilson, at Paisley.

METROPOLITAN COMMISSION OF SEWERS.

A GENERAL COURT was held on Thursday last week, at the Sewers-office, Greek-street, Soho-square; the Rev. W. Stone in the chair. The court was held for the purpose of hearing appeals against the sewer-rates for the Westminster district of the commission.

Appeal of the Vauxhall-bridge Company.—The chairman of the Vauxhall-bridge Company, and a deputation of the Directors, attended the court for the purpose of appealing against the sewer-rate charged upon the Company for the bridge, and also for a house belonging to the Bridge Company.

The Chairman of the Company being called upon to shew cause why the rate was objected to, said, in the first place they received no benefit, and avoided no damage by the works of the commissioners, as the bridge was considerably above high-water mark, and there was an excellent causeway leading to the House of Parliament. If any benefit was received, however remote, the law might be so strained that the party benefited could be called upon to pay the rate; but even on this ground the liability of the Company was entirely out of the question. As regarded this Company, the commissioners were utterly powerless, as they had no jurisdiction over the bed of the river; for when the Act was obtained a large sum of money was paid to the corporation of the city of London for interfering with their property. He was aware that a dispute was pending between the Crown and the city of London as to that right, yet still that did not affect the present case, as the Commissioners of Sewers had no power over the bed of the river. The bridge stood upon eight piles in the river, and if there was any portion in their jurisdiction it was the abutment, which could only be liable to a small proportion of the charge levied, according to the charge for the eight piles. In support of his argument he referred to "Challis on Sewer Rates," and the case of "Masters v. Stall," where Lord Tenterden laid it down in his judgment, that if a party receives, or is likely to receive benefit, he was liable, but not otherwise. He also cited the cases of "Neave v. Werther," and "Tracy v. Taylor," as to the non-liability of the Royal Chelsea Hospital and the Millbank Prison; and the opinion of Lord Denman in giving judgment in the former case, who then said that there was an inconvenience, expense, and trouble in taxing public buildings, and that such taxes ought not to be imposed on public property. This bridge was public property, for by the terms of the Act of Parliament the Directors had only powers to levy tolls till the debt originally incurred was paid off, when the bridge would become the property of the public.

Mr. Hutton wished to know whether the Company paid the poor-rates?

The Chairman of the Company said most undoubtedly they paid poor-rates, being general rates for all property, but a sewer-rate was a very distinct case. It had been laid down that the commissioners might decree lands in default of payment of rates, but could it be argued that in default of payment they could seize upon Vauxhall Bridge?

Mr. Leslie.—Most certainly.

The Chairman, in conclusion, remarked that although former rates had been paid, yet they had always been paid under a protest, and on one occasion a distress had been put into their toll-house for the amount. As each rate, however, became a separate debt, they could not be prejudiced by any former transaction. He then recapitulated his arguments, and said that under the circumstances he humbly and confidently submitted that this species of property was not liable to sewers-rates, intimating at the same time that the Company had taken the opinion of counsel, who assured them they were justified in their resistance to them and were not liable.

Mr. Hutton was of opinion that the Company did receive benefit from the works of the commission, and held a beneficial occupation. The question as to bridges had been settled long ago.

Mr. Leslie said that even the Act for building Vauxhall Bridge, and under which the gentleman now before them held his office, contained a clause, that nothing therein should tend to alter or diminish the powers of the Westminster Commissioners of Sewers. If the approaches to the bridge were overflowed, the bridge itself would be useless.

Mr. Huetlet (the Clerk) said the Vauxhall Bridge approaches crossed one of the most expensive sewers in the Westminster district; and one part of the Vauxhall Bridge-road was three feet below high water, and but for the works of the commissioners this would be overflowed. If their sewer fell in the approach to the bridge would be stopped.

The Chairman of the Company wished to know, as the bridge stood in the river Thames, for what part they were to be rated? Surely, they would not call the Thames a sewer?

Mr. Leslie—Certainly it is, and the principal sewer of the metropolis. (Laughter.)

After a few words from Mr. Chadwick, and other